REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

The Abstract was objected to on the basis of inclusion of legal phraseology.

A substitute Abstract has been prepared and is submitted herewith to replace the original Abstract.

Thus, the objection to the Abstract is deemed to overcome.

The Examiner is respectfully requested to acknowledge the claim for foreign priority, and to acknowledge that a copy of the certified priority document has been received from the International Bureau.

Claims 1-8 are cancelled without prejudice and rewritten as new claims 9-16. The wording of the new claims is deemed to overcome the informalities noted by the Examiner in the Office Action, as well as providing a relationship between the step of collecting and satisfying the formula (B/A) < 1.25 recited in claim 1, now rewritten as new claim 9.

Lastly, claims 1-8 are rejected under 35 USC 103 as unpatentable over EP 0 778 255. This ground of rejection is respectfully traversed as applied to the new claims presented.

The present invention is a method which comprises making an aqueous medium absorb acrylic acid in a reaction gas in a collection device and collecting the acrylic acid as a bottoms containing the absorbed acrylic acid, in which a value of the ratio of a weight fraction A, that is a weight fraction of acrylic acid to all condensable ingredients in the reaction gas before collecting acrylic acid, and a weight fraction B, that is a weight fraction of acrylic acid in the bottoms of the collection device (B/A), is adjusted to a specific range.

In the present invention, the B/A is adjusted to the specific range by adjusting at least one of the following: an amount of water distilled from the collection device; an amount of the reaction gas supplied before collection; an amount of the aqueous medium used; and a moisture content in the aqueous medium.

Such factors for the adjustment of the value of the B/A are described in the original specification of the present application (see page 5, line 25 to page 6, line 2 and page 7, lines 14-16).

On the other hand, in EP '255, a method, which comprises making an aqueous medium absorb acrylic acid in a reaction gas in a collection device and collecting the acrylic acid as a bottoms containing the absorbed acrylic acid, is described.

Specifically, in Example 1 of EP '255, the reaction gas containing 0.680 kg/h of acrylic acid, 0.014 kg/h of acetic acid and 0.450 kg/h of water; the aqueous medium containing 4.8% by weight of acrylic acid, 8.0% by weight of acetic acid and 0.01% by weight of octene; the bottoms containing 0.674 kg/h of acrylic acid; and a distillate of 0.006 kg/h of acrylic acid, are described.

In addition, in Example 3 of EP '255, the reaction gas of Example 1; the aqueous medium containing 4.2% by weight of acrylic acid, 8.2% by weight of acetic acid and 0.1% by weight of ethylbenzene; the bottoms containing 0.675 kg/h of acrylic acid; and a distillate of 0.005 kg/h of acrylic acid; are described.

Further, in Example 5 of EP '255, the reaction gas of Example 1; the aqueous medium containing 3.2% by weight of acrylic acid, 7.9% by weight of acetic acid and 0.1% by weight of toluene; the bottoms containing 0.673 kg/h of acrylic acid; and a distillate of 0.007 kg/h of acrylic acid; are described.

Still further, in Example 7 of EP '255, the reaction gas of Example 1; the aqueous medium containing 1.8% by weight of acrylic acid, 7.5% by weight of acetic acid and 0.1% by weight of ethylbenzene; the bottoms containing 0.673 kg/h of acrylic acid; and a distillate of 0.008 kg/h of acrylic acid; are described.

In addition, in Example 9 of EP '255, the reaction gas of Example 1; the aqueous medium containing 2.9% by weight of acrylic acid, 8.2% by weight of acetic acid, 0.1% by weight of ethylbenzene and 0.01% by weight of heptane; the bottoms containing 0.673 kg/h of acrylic acid; and a distillate of 0.007 kg/h of acrylic acid; are described.

Further, in Example 11 of EP '255, the reaction gas of Example 1; the aqueous medium containing 1.5% by weight of acrylic acid, 7.9% by weight of acetic acid, 0.08% by weight of

toluene and 0.01% by weight of heptane; the bottoms containing 0.672 kg/h of acrylic acid; and a distillate of 0.008 kg/h of acrylic acid; are described.

Moreover, in Example 13 of EP '255, the reaction gas of Example 1; the aqueous medium containing 0.8% by weight of acrylic acid, 7.5% by weight of acetic acid, 0.07% by weight of toluene and 0.01% by weight of heptane; the bottoms containing 0.671 kg/h of acrylic acid; and a distillate of 0.009 kg/h of acrylic acid; are described.

As mentioned above, in EP '255, the method for collecting acrylic acid, the content (the mass per unit time) of condensable ingredients in the reaction gas, the constitution of organic ingredients in the aqueous medium, and the amounts (the mass per unit time) of the collected acrylic acid and the non-collected acrylic acid are described.

However, EP '255 does not disclose either the weight fraction A of acrylic acid to all condensable ingredients in the reaction gas before collecting acrylic acid, nor the weight fraction B of acrylic acid in the bottoms of the collection device.

In addition, EP '255 does not describe any of the following features: the amount of water distilled from the collection device; the amount of the reaction gas supplied before collection; the amount of the aqueous medium used; and the moisture content in the aqueous medium, as a factor for adjusting the B/A.

The Examples and Comparative Examples of the specification as summarized on page 19 in Table 1 demonstrate the unexpected improvement of the claimed invention in collection of acrylic acid in the bottoms of the column and unexpected improvement in reducing loss of acrylic acid from the top of the column.

In summary, the present invention is a method which comprises making an aqueous medium absorb acrylic acid in a reaction gas in a collection device and collecting the acrylic acid as a bottoms containing the absorbed acrylic acid, in which a value of the ratio of a weight fraction A, that is a weight fraction of acrylic acid to all condensable ingredients in the reaction gas before collecting acrylic acid, and a weight fraction B, that is a weight fraction of acrylic acid in the bottoms of the collection device (B/A), is adjusted to a specific range.

The cited reference clearly fails to teach or suggest the weight fraction A, or the weight fraction B. Moreover the cited reference fails to teach or suggest performing the process while maintaining the ratio of B/A < 1.25, or the criticality of this ratio in providing unexpectedly superior results of the process.

Consequently, it is respectfully submitted that claims 9 to 16 of the present application are patentable and nonobvious over EP '255.

In view of the foregoing, favorable reconsideration and allowance is respectfully solicited.

Respectfully submitted,

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